



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/513,518	02/25/2000	Cedell Adam Alexander JR.	RAL9-99-0073	7208

25299 7590 02/12/2004

IBM CORPORATION
PO BOX 12195
DEPT 9CCA, BLDG 002
RESEARCH TRIANGLE PARK, NC 27709

EXAMINER

PHILPOTT, JUSTIN M

ART UNIT	PAPER NUMBER
----------	--------------

2665

DATE MAILED: 02/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/513,518

Applicant(s)

ALEXANDER ET AL.

Examiner

Justin M Philpott

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 35-68 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 35-68 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed November 24, 2003 have been fully considered but they are not persuasive.

First, applicant argues (page 13, first paragraph) that the parsing engine of Annaamalai does not perform the same function as applicant's switch fabric because it is not configured to control the queuing and scheduling functions of a switch as described on page 6 of applicant's specification. However, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a system configured to control queuing and scheduling functions as described on page 6 of applicant's specification) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Thus, applicant's argument is moot.

Second, applicant argues (page 13, second paragraph) that the forwarding engine of Annaamalai is limited to driving layer 2 information, whereas applicant's device driver described in applicant's specification is *not* limited to driving layer 2 information. However, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a device driver which is not limited to driving layer 2 information) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the

Art Unit: 2665

claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Thus, applicant's argument is moot.

Third, applicant argues (page 14, first paragraph) that Annaamalai and/or Hartman do not teach or suggest a switch device driver operable to communicate with a switch fabric. However, as discussed in the previous office action, Annaamalai teaches the switch device driver (e.g., forwarding engine 330) is operable to communicate with the switch fabric (e.g., parsing engine 303 in conjunction with switching bus 310), wherein communication is clearly enabled via coupling 306 (e.g., see FIG. 3).

Fourth, applicant argues (page 14, third paragraph – page 15, first paragraph) that Annaamalai does not teach an FDDL API and a Switch Services API as recited in claims including claim 37. However, while Annaamalai may not recite specifically “FDDL API” and “Switch Services API”, as discussed in the previous office action Annaamalai teaches utilizing a plurality of application program interfaces (APIs) (e.g., see col. 7, lines 13-67 regarding DTP protocol wherein messages are exchanged between applications and the switching fabric). Furthermore, these APIs communicate with the FDDL system via forwarding engine 330 coupled to forwarding database 332 (e.g., see col. 7, lines 31-44 and FIG. 3). Thus, Annaamalai teaches the FDDL system (e.g., forwarding database 332) defines APIs (e.g., via operations by forwarding engine 330) for communication with the software application (e.g., see col. 5, lines 49-64 and col. 7, lines 31-44 regarding software) and for communication with the switch device driver (e.g., forwarding engine 330). Thus, applicant's argument is not persuasive.

Fifth, applicant argues (page 15, second paragraph – page 16, continued paragraph) that the switching engine of Annaamalai is not the same as an FDDL which defines a set of APIs

Art Unit: 2665

designed to enable protocol forwarding functions to be distributed in the manner that is simple, efficient and deportable as described on page 7 of applicant's specification. However, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., an FDDL which defines a set of APIs designed to enable protocol forwarding functions to be distributed in the manner that is simple, efficient and deportable as described on page 7 of applicant's specification) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Thus, applicant's argument is moot.

Sixth, applicant argues (page 16, first paragraph – page 17, continued paragraph) that Examiner has not cited a particular element in switching engine 100 of Hartman as teaching a switch device driver. However, as discussed in the previous office action, Annaamalai clearly teaches a switch device driver (e.g., forwarding engine 330). In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Thus, applicant's argument is not persuasive.

Further, applicant argues that applicant's software application and software application tower FDDL system are two separate elements, and the object server interface translator 124 of Hartman cannot teach both elements. However, as discussed in the previous office action, Hartman teaches a software application tower FDDL system (e.g., *object server* coupled to 124), and a software application (e.g., *OA&M interface translation* at 124). Thus, applicant's

Art Unit: 2665

argument that Hartman fails to teach both a software application and software application tower FDDL system is not persuasive.

Similarly, applicant argues that applicant's second software and second software application tower FDDL system are two separate elements, and the media IPA translator 112 of Hartman cannot teach both elements. However, as discussed in the previous office action, Hartman teaches a second software application tower FDDL system (e.g., *media API* coupled to 112) and a second software application (e.g., *native switch translation* at 112). Thus, applicant's argument that Hartman fails to teach both a second software application and a second software application tower FDDL system is not persuasive.

Still further, applicant argues that the logical device management 120 of Hartman is not the same as applicant's base FDDL system. However, with respect to the latter argument, applicant has provided no evidence to support such a claim. In order to provide a reasonable argument, applicant must discuss the references applied against the claims, *explaining* how the claims avoid the references or distinguish from them. Applicant has not provided such an explanation regarding this argument, thus, applicant's argument is not persuasive.

Seventh, applicant argues (page 17, first paragraph – page 18, continued paragraph) that the native switch translation 110, 112, 114, 124 of Hartman does not teach shim applications which may refer to a software component that interfaces between two other software components. However, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., shim applications which may refer to a software component that interfaces between two other software components) are not recited in the rejected claim(s). Although the claims are

Art Unit: 2665

interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Thus, applicant's argument is moot. Further, with respect to the above argument as well as arguments previously discussed regarding the prior art failing to teach elements having functionality of that described in applicant's specification, the pending claims primarily recite a listing of elements coupled to communicate with one another without reciting specific novel functionality which may distinguish the claims from the cited prior art. Accordingly, if applicant chooses to amend the claims, e.g., in the form of a request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), applicant is encouraged to amend the claims to recite specific novel functionality which may distinguish the claims from the cited prior art.

Eighth, applicant argues (page 18, second paragraph – page 19, third paragraph) that Examiner has not provided sufficient support for combining the teachings of Hartman with those of Annaamalai. However, as discussed in the previous office action, the teachings of Hartmann provide a method by which a single API can be used to control a number of switches having different message protocols (e.g., see col. 3, lines 36-39), thus providing improved network adaptability. More specifically, Hartman discloses that network switches from different manufacturers communicate using different protocols (e.g., the network switch of Annaamalai utilizes DTP, see Annaamalai, col. 4, lines 11-42), which makes object definition more complicated because the switch signaling and supervision messages of the API of the system must be rewritten to accommodate the protocol of different switches (e.g., see Hartman, col. 3, lines 27-33). The teachings of Hartman overcome this deficiency of the art, such as the network switch of Annaamalai, by providing an API that can be used to control a number of switches

Art Unit: 2665

having different message protocols (e.g., see Hartman, col. 3, lines 36-39). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Hartman to the system of Annaamalai in order to provide a method by which a single API can be used to control a number of switches having different message protocols (e.g., see Hartman, col. 3, lines 36-39), thus providing improved network adaptability by overcoming the prior art deficiency of more complicated object definition resulting from rewriting switch signaling and supervision messages of the API of the system in order to accommodate the protocol of different switches (e.g., see Hartman, col. 3, lines 27-33).

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 35-68 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,445,715 to Annaamalai et al. in view of U.S. Patent No. 6,516,355 to Hartmann et al.

Regarding claims 35, 36, 39, 43, 44, 47, 51, 52, 55-57, 60-62 and 65, Annaamalai teaches a network switch (e.g., 300, see FIGS. 2 and 3) comprising a CPU (e.g., processor, see col. 5, lines 49-64), a memory system having circuitry operable to attach to the CPU (e.g., see col. 5, lines 51-54), a switch fabric system (e.g., parsing engine 303 in conjunction with switching bus 310) having circuitry operable to attach to the CPU, a port controller (e.g., port cards 12) having circuitry operable to attach to the switch fabric system, a software application operable to execute on the CPU (e.g., see col. 5, lines 49-64 regarding software programs associated with the protocol), a Forwarding Database Distribution Library system (e.g., forwarding database 332)

Art Unit: 2665

operable to execute on the CPU, and a switch device driver (e.g., forwarding engine 330) operable to execute on the CPU; wherein the software application is operable to communicate with the FDDL system (e.g., forwarding database 332, see col. 5, line 38 – col. 6, line 28), the FDDL system (e.g., forwarding database 332) is operable to communicate with the switch device driver (e.g., forwarding engine 330, see col. 6, lines 16-28), and the switch device driver (e.g., forwarding engine 330) is operable to communicate with the switch fabric (e.g., parsing engine 303 in conjunction with switching bus 310). Further, regarding claims 36, 39, 44, 47, 52, 55, 57, 60, 62 and 65, Annaamalai further teaches a plurality of software applications (e.g., see “software programs” in col. 5, line 53; and “software processes” in col. 5, line 60) are utilized by the FDDL system, wherein the FDDL system (e.g., forwarding database 332) is preferably organized as a table structure used for learning and forwarding operations (e.g., see col. 6, lines 19-21).

However, Annaamalai may not specifically disclose the FDDL system comprises a base FDDL system and plural software application towers.

Hartmann teaches improvements for network switching equipment and, specifically, teaches an FDDL system (e.g., 100 in FIG. 4) comprising a base FDDL system (e.g., logical management device 120), a software application tower FDDL system (e.g., object server coupled to 124), and a second software application tower FDDL system (e.g., media API coupled to 112), wherein the base FDDL system communicates with a switch device driver (e.g., native switch call-cont transaction manager 116), a software application (e.g., OA&M interface translation at 124) communicates with the software application tower FDDL system, a second software application (e.g., native switch translation at 112) communicates with the second software

Art Unit: 2665

application tower FDDL system, and the base FDDL system (e.g., 120) communicates with the software application tower FDDL system (e.g., at 124) and the second software application tower FDDL system (e.g., at 112). The teachings of Hartmann provide a method by which a single API can be used to control a number of switches having different message protocols (e.g., see col. 3, lines 36-39), thus providing improved network adaptability. Accordingly, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Hartmann to the network switch of Annaamalai in order to control a number of switches having different message protocols thus providing improved network adaptability.

Regarding claims 37, 41, 45, 49, 53, 58, 63 and 67, Annaamalai teaches utilizing application program interfaces (API) for communications with the FDDL system (e.g., see col. 7, lines 13-67 regarding DTP protocol wherein messages are exchanged between applications and the switching fabric).

Regarding claims 38, 46, 54, 59 and 64, Annaamalai teaches utilizing application program interfaces (API) for communications with the FDDL system (e.g., see col. 7, lines 13-67 regarding DTP protocol wherein messages are exchanged between applications and the switching fabric). Annaamalai further teaches a plurality of software applications are utilized by the FDDL system (e.g., see col. 5, lines 53-60).

Regarding claims 40, 42, 48, 50, 66 and 68, Annaamalai in view of Hartmann teaches the switch discussed above regarding claims 35, 47, 51, 56 and 61, and further, Hartmann teaches an independent software application (e.g., system software, see col. 1, line 67) and independent software application shim (e.g., native switch translation 110, 112, 114, 124 in FIG. 4) are operable to execute on a CPU. As discussed above, the teachings of Hartmann provide a method

Art Unit: 2665

by which a single API can be used to control a number of switches having different message protocols (e.g., see col. 3, lines 36-39), thus providing improved network adaptability.

Accordingly, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Hartmann to the network switch of Annaamalai in order to control a number of switches having different message protocols thus providing improved network adaptability.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin M Philpott whose telephone number is 703.305.7357. The examiner can normally be reached on M-F, 9:00am-5:00pm.

Art Unit: 2665

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy D Vu can be reached on 703.308.6602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Justin M Philpott



HUY D. VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600